

REMARKS

Applicants have reviewed and considered the Office Action dated August 23, 2007 and the references cited therein. In the Office Action, Claims 19, 20, 24, 25, and 27-30 were rejected under 35 U.S.C. § 102(b) as anticipated by Ciavattoni et al. (U.S. Patent 3,665,682) and Claims 21 and 26 were rejected under 35 U.S.C. § 103(a) as unpatentable over Ciavattoni as applied to Claims 19, 20, 24, 25, and 27-30 above, and further in view of Goosen (U.S. Patent 5,019,060). The Examiner further rejected Claims 15 and 16 under 35 U.S.C. § 103(a) as unpatentable over Ciavattoni and Goosen as applied to Claim 21 above, and further in view of Walker (U.S. Patent 5,195,995). However, Claims 15 or 16 were not pending in the present application, and it is believed that the Examiner meant to reject Claims 22 and 23 instead of Claims 15 and 16.

In response, Applicants have canceled Claims 19-30, without prejudice, and added Claims 31-44, thereby obviating the basis for the rejections. Nonetheless, as explained below none of Ciavattoni, Goosen, nor Walker, alone or in combination, disclose, teach, or suggest Claims 31-44.

Independent Claim 31 is directed to a vacuum system. The vacuum system comprises “a vacuum source; a connector comprising an inlet, an outlet in communication with the vacuum source, a separation chamber in communication with the inlet, an air pathway in communication with the separation chamber and the outlet, and a fluid pathway separate from the air pathway and in communication with the separation chamber; an end effector in communication with the inlet; and a removable decontamination unit adapted to be coupled to the connector.”

None of Ciavattoni, Goosen, and Walker, alone or in combination, disclose, teach, or suggest all the limitations of Claim 31. Particularly, Ciavattoni does not disclose, teach, or suggest “a connector comprising an inlet [and] an outlet in communication with the vacuum source.” Rather, Ciavattoni discloses a dental evacuation apparatus. Ciavattoni, Abstract. The dental evacuation apparatus comprises evacuation devices “operated from a coordinated air operated evacuation system utilizing the venturi principle.” Ciavattoni, Col. 2, ll. 52-54. The venturis are each “mounted to the top of the separator 26” and are designated by the numerals 28, 30, and 32. Ciavattoni, Col. 2, ll. 61-64 (emphasis added). Thus, the venturis are located in the

apparatus pathway prior to the inlet of the separation chamber 68. See generally, Ciavattoni, Col. 2, l. 69-Col. 3, l. 46.

As recited by Ciavattoni, the venturis operate as follows:

Each of the venturis 28, 30 and 32 are identical in construction and operation; thus only venturi 32 shown in section on the left will be described. Venturi 32 includes a restricted annular zone 52, and an enlarged passage 53 located downstream thereof. Compressed air or gas enters annular zone 52, and is directed past passage 50 toward the separator 26 via the enlarged passage 53. Thus, a suction or negative pressure is created upstream in the saliva ejector 16, saliva ejector 16 being connected to conducting line 24. As a result saliva is directed through line 24, passage 50, through the enlarged passage 53 and toward separator 26. It is noted that venturi 32 is threadably connected to separator 26, having a gasket 58 disposed therebetween to insure a good fluid-tight seal with the separator. Ciavattoni, Col. 3, ll. 11-25 (emphasis added).

Clearly, Ciavattoni discloses a vacuum source located prior to the separator 26. As such, Ciavattoni provides no vacuum pressure subsequent the separation chamber 68. Additionally, because Ciavattoni discloses the use of venturis 28, 30, and 32, a source of compressed air or gas is required to operate the venturis. See, Ciavattoni, Col. 2, l. 70-Col. 3, l. 10.

Furthermore, Ciavattoni does not disclose “a removable decontamination unit adapted to be coupled to the connector.” The Examiner asserts that the exhaust chamber 70 and filtering means 76 disclosed in Ciavattoni provide a decontamination unit. The exhaust chamber 70 and filtering means 76 are not a decontamination unit as described in Applicants’ Specification:

Referring to FIG. 6, in the instance of reusable and reposeable type connectors and/or filter boxes, the connector and/or filter box structures may be decontaminated before a subsequent use by providing a decontamination unit 20 which comprises a suitable container structure adapted to be coupled to the connector and/or the filter box. For example, the decontamination unit may take the form of a collapsible plastic container which contains a pre-measured amount of a decontaminating, disinfecting, sterilizing or cleaning solution. In one embodiment, the decontamination unit is adapted to be attached to the filter box or to the connector, and the contents are then withdrawn upon actuation of the vacuum source. The container collapses and may be disposed. In some

embodiments, the decontamination unit may include a decontaminate flow regulating mechanism or structure, and/or decontaminates may be loaded or contained in separate compartments whereby they may be dispensed together, selectively or sequentially. Specification, Para. [0028].

Further, Ciavattoni nowhere discloses a decontamination unit that is "removable" and "adapted to be coupled to the connector," as recited in Applicants' Claim 31. Indeed, nowhere does Ciavattoni disclose that exhaust chamber 70 and filtering means 76 are removable.

Neither Goosen nor Walker disclose a decontamination unit, and particularly do not disclose "a removable decontamination unit adapted to be coupled to the connector."

Dependent Claims 32-42 are also patentably distinguishable from Ciavattoni, Goosen, and Walker, alone or in combination, for at least the reasons stated above and for the additional limitations recited in each claim.

For example, with regard to Claim 33, none of the cited references disclose, teach, or suggest that a "decontamination unit comprises a collapsible container containing a pre-measured amount of decontaminant." The Examiner asserts that the exhaust chamber 70 and filtering means 76 "may be collapsed under sufficient externally applied force." Office Action dated August 23, 2007, p. 3. Obviously and generally, anything may be collapsed under sufficient externally applied force. The Examiner does not cite any support in Ciavattoni that the exhaust chamber 70 and filtering means 76 are, or can be, collapsible. Indeed, Ciavattoni discloses and illustrates the exhaust chamber 70 and filtering means 76 as solid and stationary elements. See, Ciavattoni, Col. 3, ll. 47-55; Figures 1 and 2.

With regard to Claim 37, none of the cited references disclose or suggest a connector comprising "a bioaerosol inlet separate from the inlet, and in communication with the outlet." The Examiner asserts that venturi 30 disclosed in Ciavattoni provides such an inlet. Venturis 28, 30, and 32 each lead to a dental evacuation device and provide a pathway from the evacuation device in communication with the separator 26. Ciavattoni does not disclose "a bioaerosol inlet separate from the inlet."

With regard to Claim 41, none of the cited references disclose or suggest a separation chamber including “a baffle in cooperation with the inlet for optimizing the separation of liquid and gaseous material.” The Examiner asserts that transverse partition 66 and tubular passageway 72 disclosed in Ciavattoni provide a baffle. In reality, the transverse partition 66 and tubular passageway 72 are components of the housing of the separator 26 and do not provide a baffle for optimizing the separation of liquid and gaseous material. Tubular passageway 72 merely provides a passageway through which “separated gas is directed to exhaust chamber 70.” Ciavattoni, Col. 4, ll. 49-52. Separation of the liquid and gaseous material, as disclosed in Ciavattoni, is not assisted through the use of a baffle. Rather, as described in Ciavattoni:

Extending into the separation chamber 68 is a plurality of discharge lines or passageways represented by the numeral 86. Discharge line 86 are connected to intermediate lines 59 for the purpose of conducting matter from the intermediate lines into the separation chamber. Each of the discharge lines is identical in construction, and only the line shown in section on the left will be described. As can be seen discharge line 86 connects with tubular member 64, line 86 terminating with a curved portion disposed adjacent to the inner annular surfaces of the separation chamber, and having substantially the same center of curvature as the inner annular surfaces (FIG. 3). All of the described portions of the separation chamber have inner annular surfaces having the same center of curvature. Thus, matter of debris directed through discharge line 86 exits through opening 88, swirling around the inner annular surfaces of the separation chamber in a generally whirlpool fashion or manner. Thus, it can be seen that there is a plurality of debris conducting passageways extending from the evacuation devices into the separation chamber, each passageway terminating with a curved portion disposed adjacent to the inner annular surfaces of the separation chamber. Ciavattoni, Col. 3, l. 61-Col. 4, l. 7 (emphasis added).

Clearly, Ciavattoni does not disclose or suggest a separation chamber including “a baffle in cooperation with the inlet for optimizing the separation of liquid and gaseous material.”

Independent Claim 43 is directed to a vacuum connector adapted to be coupled to a vacuum source. The vacuum connector comprises “one or more inlets, at least one of which is adapted to couple with an end effector; an outlet adapted to couple with the vacuum source; one or more separation chambers in communication with one or more of the inlets; an air pathway

from the inlet to the separation chamber and then to the outlet; and a fluid pathway from the inlet to the separation chamber, the fluid pathway being separate from the air pathway; and a removable decontamination unit adapted to be coupled to an inlet of the connector.”

Claim 43 is patentably distinguishable from Ciavattoni, Goosen, and Walker, alone or in combination, for at least the reasons provided above with respect to Claim 31. Claim 44 depends from, and incorporates all the limitations of, Claim 43. Therefore, Claim 44 is also patentably distinguishable from Ciavattoni, Goosen, and Walker, alone or in combination.

Furthermore, with respect to Claim 44 and as stated above with respect to Claim 41, none of the cited references disclose, teach, or suggest a separation chamber including “a baffle in cooperation with the inlet for optimizing the separation of liquid and gaseous material.”

CONCLUSION

This response is being submitted on or before January 23, 2008, and a two month extension of time to respond until that date is hereby requested. The fee of \$230.00 associated with the request should be charged to Deposit Account No. 04-1420. The Commissioner is also hereby authorized to charge any additional fees or credit any overpayments to Deposit Account No. 04-1420.

This application now stands in allowable form, and reconsideration and allowance are respectfully requested.

Respectfully submitted,

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